



June 30, 2009

Mr. John Rajkowski (3HS12)
Site Assessment Manager
U.S. Environmental Protection Agency Region 3
1650 Arch Street
Philadelphia, Pennsylvania 19103

Subject: Lead Smelter Sampling Trip Reports
EPA Contract No. EP-S3-05-02
TDD Nos. E33-024-08-09-001, E33-024-08-09-003, E33-024-08-09-004 and
E33-024-08-09-005

Dear Mr. Rajkowski:

Tetra Tech EM Inc. (Tetra Tech) is submitting the trip reports for the following four lead smelter sites:

1. Car-Mor Metals Co. - TDD No. 024-08-09-001 - DTN 0754
2. General Smelting Co. – TDD No. 024-08-09-004 – DTN 0755
3. John T. Lewis – TDD No. 024-08-09-005 – DTN 0757
4. Franklin Smelting – TDD No. 024-08-09-003 – DTN 0760

As discussed in the trip report submitted for each site, the lead levels detected in soils at all of the sites sampled by Tetra Tech (no samples were collected at the Franklin Smelting site) exceeded the residential, and in some cases industrial action levels for lead recommended by EPA. Based on these results, Tetra Tech recommends that the residents living at the locations sampled be contacted regarding the potential risks associated with exposure to elevated levels of lead. Tetra Tech further recommends that the Agency for Toxic Substances and Disease Registry (ATSDR) be consulted prior to contacting the residents to determine the appropriate residential notification mechanism and future recommendations to remove unacceptable risk to residents living in the area.

If you have any questions regarding the draft report, please contact me at (215) 364-2148.

Sincerely,

[Redacted Signature]

Project Manager

Enclosures (4)

cc: TDD File

**TRIP REPORT FOR THE
GENERAL SMELTING COMPANY SITE
SOIL SAMPLING EVENT
PHILADELPHIA, PENNSYLVANIA**

Prepared for

U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103

Prepared by

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EPA Contract No. EP-S3-05-02

Technical Direction Document No. E33-024-08-09-004
Document Tracking No. 0755

June 30, 2009

Prepared by

Approved by



Project Manager

START Site Assessment Manager

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1.0 INTRODUCTION

Under Eastern Area Superfund Technical Assessment and Response Team (START) Contract No. EP-S3-05-02, Technical Direction Document (TDD) No. E33-024-08-09-004, U.S. Environmental Protection Agency (EPA) Region 3 tasked Tetra Tech EM Inc. (Tetra Tech), to conduct a site inspection (SI) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in support of site assessment activities conducted at the General Smelting Company site located at 2901 East Westmoreland Street in Philadelphia, Pennsylvania, 19134. The data collected during the SI will be used to determine the need for additional assessment or response activities at the site or in the surrounding area.

This trip report provides site background information in Section 2.0, describes investigation activities in Section 3.0 and summarizes the analytical data and provides conclusions in Section 4.0. All references cited in this report are listed in Section 5.0. All figures are included in Appendix A and a copy of the logbook documentation is provided in Appendix B.

2.0 SITE BACKGROUND

Former potential lead smelter sites nationwide were identified in an April 2001 article published in the American Journal of Public Health by Eckel, and others (Eckel study) (Reference [Ref.] 1). The majority of these former potential lead smelters operated prior to 1964 and closed before the current environmental regulations were instituted. As part of the Eckel study, soil samples were collected from several of the identified former lead smelter properties. Results from the analysis of these soil samples indicated that concentrations of lead exceeded EPA's soil screening level for lead in residential soils. The results of the Eckel study indicate that the air disposition of lead into soils from former smelter operations may present an ongoing public health concern due to exposure of residential populations, especially children to soils containing elevated concentrations of lead (Refs. 1, 2, and 3). One of the sites identified in the Eckel study was the General Smelting Company site formerly located at 2901 East Westmoreland Street in Philadelphia, Pennsylvania. Each former smelter property was given a number in Eckel's study. The Eckel study number for this site is 308 (Ref. 1).

The geographic coordinates of the former General Smelting Company facility are 39.9833° north latitude and 75.0852° west longitude on the Philadelphia and Camden, Pennsylvania – New Jersey Quadrangle, 7.5 minute series, United States Geological Survey topographic map (see Appendix A, Figure 1). The site is identified in EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database as the General Smelting Company site, CERCLIS ID Number PAN000306637 (Ref. 4).

Tetra Tech completed a windshield reconnaissance of the site and surrounding area on April 8, 2009. The location of the former smelter currently consists of large warehouse type structures occupied by William Parker Associates, Inc. and asphalt-paved parking areas/access roads. As a result of the site being developed with structures and paved surfaces, potential soil sample collection locations were not identified on the former smelter site. The property is located in a mixed land use area consisting of large warehouse type structures and recreational ball fields. Based on the close proximity to the former smelter site, Tetra Tech recommended a soil sampling event be conducted at the adjacent recreational ball fields.

3.0 INVESTIGATION ACTIVITIES

On May 1, 2009, Tetra Tech collected in situ and ex situ soil samples from the adjacent recreational ball fields. The samples were analyzed for lead concentration using a Niton model XLt portable x-ray fluorescence (XRF) analyzer, calibrated to analyze bulk soil samples using a cadmium₁₀₉ radioactive source. XRF analysis was performed in accordance with EPA Emergency Response Team (ERT) Standard Operating Procedure (SOP) No. 1707, "X-MET 880 Field Portable X-Ray Fluorescence Operating Procedures" (Ref. 5).

Tetra Tech collected in situ soil samples from 23 randomly selected locations within the recreational ball fields (see Appendix B, Logbook Documentation). The in situ lead concentrations recorded ranged from 36.4 parts per million (ppm) to 601.0 ppm. To confirm the results of the in situ readings, Tetra Tech collected soil from four locations for ex situ XRF analysis. The samples were collected from 0 to 6 inches below the ground surface. Each sample was placed in a plastic bag and transported to the Tetra Tech Boothwyn office for XRF sample preparation and analysis.

The ex situ sample preparation steps included:

- Placing a 50-gram aliquot of homogenized soil in a labeled baking cup
- Placing baking cup in oven for 2 hours at 350° F
- Screening the dried, 50-gram sample through a #10 mesh sieve (60 micron)
- Placing sieved sample in labeled XRF analysis cup
- Placing clean paper over sample in cup, place cotton ball over paper, and snap on the sample cup cover

Each XRF sample cup was placed into the portable XRF for analysis. Table 1 below summarizes the results, the sample locations are provided in Appendix A, Figure 3.

TABLE 1
XRF ANALYTICAL RESULTS SUMMARY

Sample ID	Location	Analyte	Result (ppm)
GS-01	North-central portion of the recreational ball field property	Lead	325
GS-02	Central portion of recreational ball field property	Lead	475
GS-03	Southeastern corner of recreational ball field property	Lead	620
GS-04	Northeastern corner of recreational ball field property	Lead	519

Notes:

ppm = parts per million

XRF = X-Ray Fluorescence

4.0 ANALYTICAL RESULTS SUMMARY AND CONCLUSIONS

EPA has established a soil screening level (SSL) for lead in residential soils (400 ppm) and industrial soils (800 ppm) (Ref. 6). The SSL can be used as a guidance level to identify sites that may pose potential risk and warrant additional assessment. The SSL established for residential soil of 400 ppm is a risk-based concentration calculated for a bare soil child's play area and the level established for industrial soil is the risk-based concentration for a non-play area (Ref. 7). As shown in Table 1, none of the lead concentrations recorded for ex situ samples collected in the vicinity of 2901 East Westmoreland Street exceeded the industrial soil (non-play area) SSL. Three samples exceeded the residential (play area) SSL, with a maximum concentration detected of 620 ppm. The ex situ analytical results confirmed the results obtained during the in situ

sampling, which indicated a maximum lead concentration in the vicinity of the former General Smelting Company site, of 601.0 ppm.

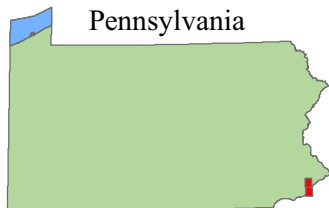
5.0 REFERENCES

1. Eckel, W.P., Rabinowitz, M.B., Foster, G.D. American Journal of Public Health. "Discovering Unrecognized Lead-Smelting Sites by Historical Methods". April 2001.
2. Pennsylvania Department of Health. Suspected Former Lead Smelter Sites: A Potential Risk Factor for Childhood Lead Poisoning. August 2004.
3. U.S. Environmental Protection Agency (EPA). Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive 9355.4-12. July 14, 1994.
4. U.S. EPA. Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) database. On-Line Address: <http://cfpub.epa.gov/supercpad/cursites/srchsites.cfm>
5. EPA. SOP 1707. "X-MET 880 Field Portable X-Ray Fluorescence Operating Procedures." ERT. Edison. December 1994.
6. EPA. Regional Screening Level Table Master April 2009. May 19, 2009. Available at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/master_sl_table_run_April2009.pdf
7. Agency for Toxic Substances & Disease Registry. Case Studies in Environmental Medicine (CSEM). "Lead Toxicity, What are the U.S. Standards for Lead Levels?" Available at: www.atsdr.cdc.gov/csem/lead/pb_standards2.html

APPENDIX A
FIGURES



Quadrangle Location = ■
Pennsylvania



General Smelting Co. Site
Philadelphia, Pennsylvania

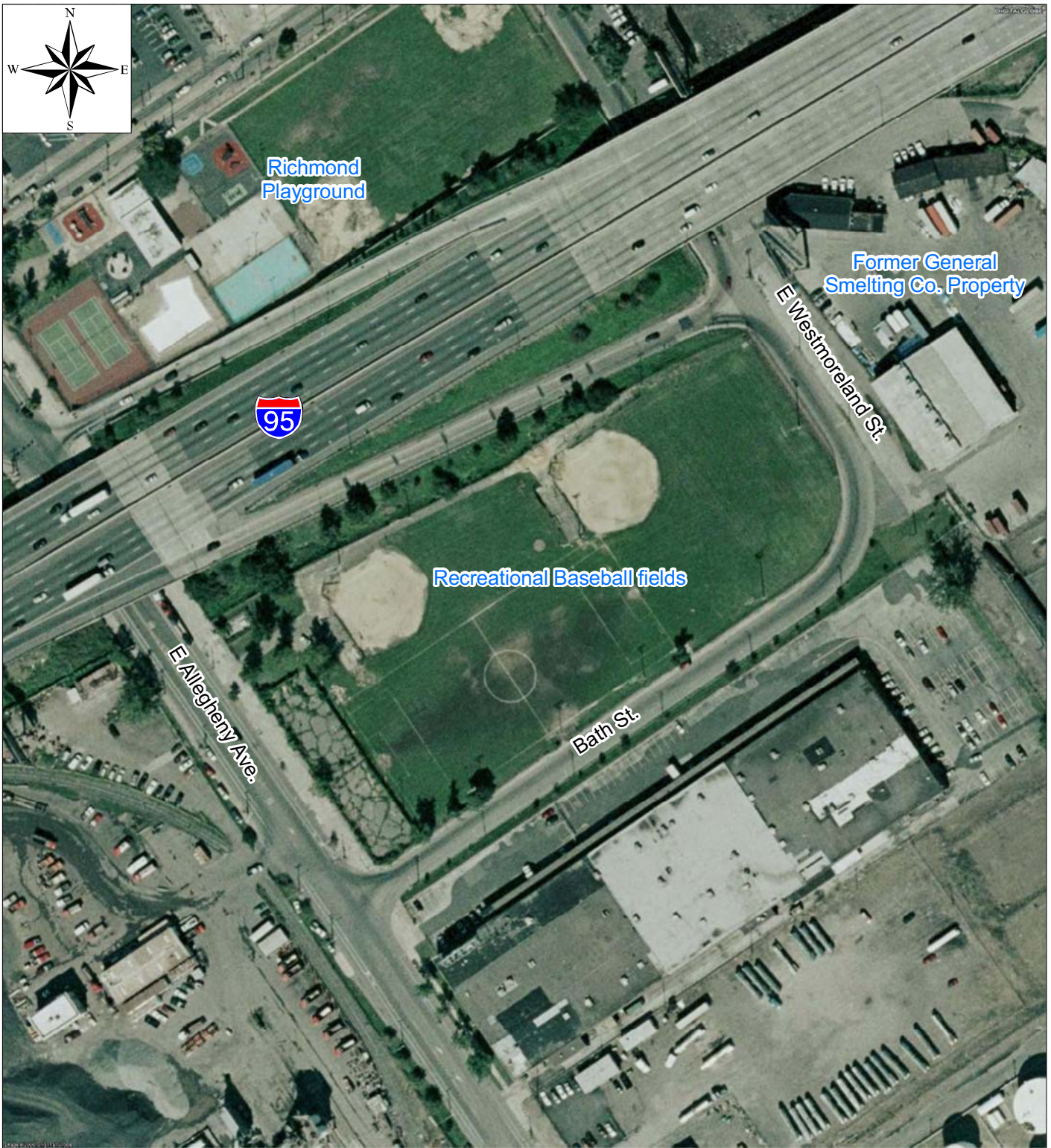
Figure 1
Site Location Map

TDD No. E33-024-08-09-004
EPA Contract No. EP-S3-05-02

Map created on June 25, 2009
by D. Call, Tetra Tech EM Inc.



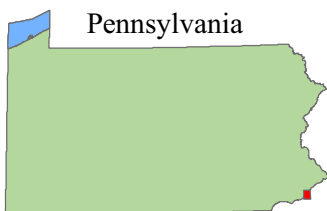
TETRA TECH



Source: Modified from DigitalGlobe aerial photography, October 1, 2006.

0 100 200
Feet

Approximate Site Location = ■



Pennsylvania

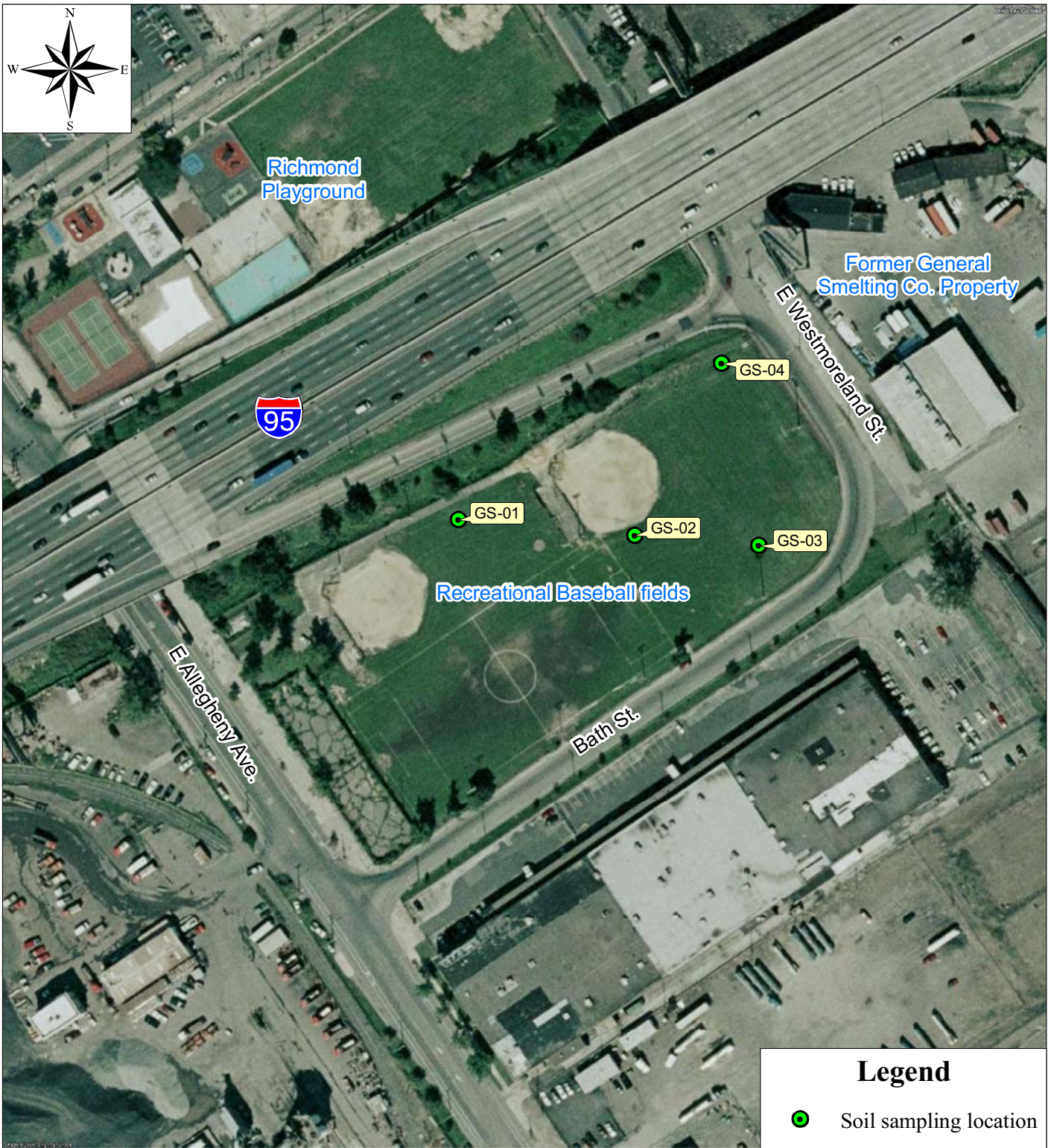
General Smelting Co. Site
Philadelphia, Pennsylvania

Figure 2
Site Layout Map

TDD No. E33-024-08-09-004
EPA Contract No. EP-S3-05-02

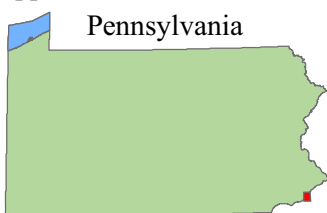
Map created on June 25, 2009
by [REDACTED] Tetra Tech EM Inc.





Source: Modified from DigitalGlobe aerial photography, October 1, 2006.

Approximate Site Location = ■



General Smelting Co. Site
Philadelphia, Pennsylvania

Figure 3
Sampling Location Map

TDD No. E33-024-08-09-004
EPA Contract No. EP-S3-05-02

Map created on June 25, 2009
by [REDACTED] Tetra Tech EM Inc.



APPENDIX B
LOGBOOK DOCUMENTATION

5/1/09 - General Smelting Site

- Friday, 55°F, overcast, light rain.

} Tetra Tech

- [redacted] arrive at General Smelting site location @ 955 and meet up with John Rajkowski - EPA Region III.

1010 [redacted] show John Rajkowski the location of the former General Smelting site and walk over to the adjacent bull field/recreational field to begin collecting insitu + exsitu samples.

[redacted] begins collecting insitu XRF readings from bull field/recreational field. See attached figures for insitu XRF reading locations + exsitu sample locations.

Location	XRF Reading (ppm)	Exsitu Sample
1	331	N/A
2	338	GS-04 @ 1057
3	266	N/A
4	268	N/A
5	65.3	N/A
6	Below detection limit	N/A
7	36.4	N/A
8	247	GS-01 @ 1024

5/1/09 - General Smelting Site (Cont'd)

Location	XRF Reading (ppm)	Exsitu Sample
9	100.4	N/A
10	70	N/A
11	200	N/A
12	115	N/A
13	166	N/A
14	122	GS-02 @
15	166	N/A 1031
16	176	N/A
17	237	N/A
18	322 @ 1040	GS-03 @ 1040
19	129	N/A
20	213	N/A
21	117	N/A
22	103	N/A
23	193	N/A

For discrete samples collected from 4 insitu reading locations for insitu

analysis: Done: Samples:

Sample: GS-01A - 1024 - DD

GS-02A - 1031 - DD

GS-03 - 1040 - DD

GS-04 - 1057 - DD

5-1-09 - General Smelting Site (Cont'd)

General Smelting Site



5-1-09 General Smelting Site (Cont'd)



5-1-09 - General Smelting Site (Cont'd)5-1-09 General Smelting Site (Cont'd)

- All ex situ soil samples were collected in accordance with the SAP 1100 - DD, BW offsite.

Ex situ XRF Readings:

GS-01	385	ppm
GS-02	475	ppm
GS-03	620	ppm
GS-04	579	ppm